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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,530	07/06/2001	Toshiya Kojima	Q64665	3383

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EXAMINER	
LIANG, LEONARD S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/899,530	KOJIMA ET AL.	
	Examiner	Art Unit	
	Leonard S Liang	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,7-9,11,12 and 14* is/are rejected.

7)☒ Claim(s) *3, 6, 10, and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

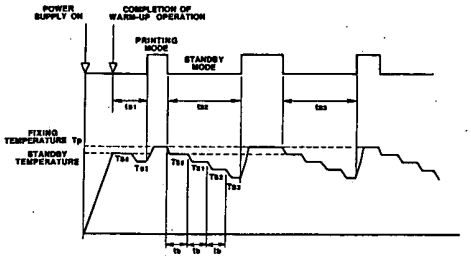
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 4-5, 7-9, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al (US Pat 5321478).

Nakamura et al (US Pat 5321478) discloses:

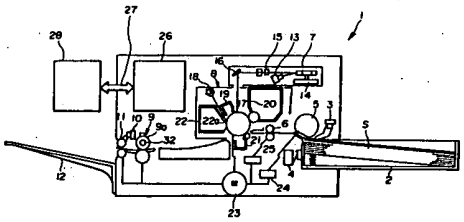
- {claim 1} An image-forming device (column 1, lines 8-12) comprising: a heating device (column 1, lines 29-30); a control device which controls the heating device by on/off control based on an on/off control signal having a period that expresses an amount of time required for one on/off cycle (abstract; column 1, lines 29-47; on/off control signal inherent in the teaching that "The electric power reduction unit sets the predetermined time period variably in accordance with frequency of image forming operations discriminated by the discriminating unit"), and alters the period of the on/off control signal in accordance with control modes (figure 16, reference Printing Mode, Standby Mode, ts1, ts2, ts3), that comprise a printing mode for maintaining the heating drum at the predetermined temperature during image-formation (figure 16, reference printing mode; column 1, lines 31-38), and at least one ordinary mode which is used at times other than during image formation (figure 16, reference standby mode; column 1, lines 31-38), wherein, the period of on/off control signal of the printing mode (T1) is less than the period of the on/off control signal of the at least one ordinary mode. (figure 16, reference Printing Mode, Standby Mode, ts2)

FIG.16



- {claim 2} standby mode (column 1, lines 31-38); pre-heating mode (figure 16, reference Ts1, Ts2, Ts3; column 1, lines 57-60; column 2, lines 7-10) ; if the period of on/off control of the printing mode is T1, a period of on/off control of the standby mode is T2 and a period of on/off control of the pre-heating mode is T3, then at least one of the following relationships: T1<T2 and T1<T3 is satisfied (T1<T3; figure 16, reference Ts1, Ts2, Ts3)
- {claim 4} information of the image is recorded onto a photosensitive material by exposure (figure 1, reference 18; column 4, lines 67-68), and the image is formed on a transfer material which is superposed with the photosensitive material at the heating drum (column 1, lines 14-22). As drafted, this reads on the claimed invention.

FIG.1



- {claim 5} the control device alters a duty ratio of the on/off control signal in response to a difference between a current temperature of the heating drum and the pre-determined temperature (column 1, lines 42-47)
- {claim 7} when image formation has finished, the printing mode is deselected and the standby mode is selected (figure 16, reference Printing Mode, Standby Mode)
- {claim 8} if the standby mode is selected and no image-formation is performed for a predetermined period of time, then the pre-heating mode is selected (figure 16, reference Ts0, Ts1)

- {claim 9} in the pre-heating mode, the heating drum is maintained at a temperature lower than the predetermined temperature (figure 16, reference Ts0, Ts1)
- {claim 11} information of the image is recorded onto a light and heat sensitive material by exposure, and the image is formed on the light and heat sensitive material by heating at the heating drum (column 1, lines 14-30; column 4, lines 67-68)
- {claim 12} An image-forming device in which image information is exposed onto and carried by photosensitive material, and an image is formed on transfer material by the transfer material being superposed with the photosensitive material at a heating drum heated to a predetermined temperature (as taught in claim 4), the device comprising: a heating device which heats the heating drum; and a control device which controls the heating device by on/off control based on an on/off control signal having a period that expresses an amount of time required for one on/off cycle, and alters the period of the on/off control signal in accordance with control modes (as taught in claim 1), that comprise a printing mode for maintaining the heating drum at the predetermined temperature during image-formation, a standby mode for keeping the heating drum in a state such that image information can be initiated promptly, and a pre-heating mode for reducing power consumption of the heating drum while keeping the heating drum in a state such that image-formation can be initiated in a short time (as taught in claim 2), wherein, when the period of the on/off control signal of the printing mode is T1, the period of the on/off control signal of the standby mode is T2 and the period of the on/off control signal of the pre-heating mode is T3, then T1<=T2 (figure 16; notice the widths of Printing Mode and Standby Mode Ts0 are the same), T1<=T3 (figure 16, notice the width of Printing Mode is less than that of Pre-Heat Mode Ts1+Ts2+Ts3), and at least one of T2 and T3 is greater than T1 (T3>T1 as taught in claim 2 above)
- {claim 14} An image-forming device which forms an image on a recording material at a heating drum heated to a predetermined temperature, the device comprising: a heating device which heats the heating drum (as taught in claim 1); a control device which controls the heating device by on/off control based on an on/off control signal having a period that expresses one on/off cycle time, and alters the period of the on/off control signal in accordance with control modes that comprise a printing mode for maintaining the heating drum at the predetermined temperatyre during image formation, and at least one ordinary mode which is used at times other than during image formation, wherein,

the period of the on/off control signal of the printing mode (T1) is less than the period of the on/off control signal of the at least one ordinary mode (T0) (figure 16, reference Standby Mode, Printing Mode. Ts2; column 1, lines 31-38; abstract)

Allowable Subject Matter

2. Claims 3, 6, 10, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3 and 13 includes the limitation of "The image-forming device...wherein the periods T1, T2 and T3 are set so as to satisfy the relationship T1<T2<T3," which was not found, taught, or suggested in the prior arts.

Claim 6 includes the limitation of "The image-forming device...wherein from a time when a power source of the image-forming device is turned on until a time when the predetermined temperature is reached, the period of on/off control of the heating drum is set to a period the same as the period of on/off control of the printing mode, and when the predetermined temperature has been reached, the ordinary mode is selected for maintaining the predetermined temperature," which was not found, taught, or suggested in the prior arts.

Claim 10 includes the limitation of "The image-forming device...wherein there is another temperature control signal at the image-forming device, and a temperature control signal of the heating drum has a phase difference with respect to the other temperature control signal," which was not found, taught, or suggested in the prior arts.

Response to Arguments

3. Applicant's arguments filed 03/05/04 have been fully considered but they are not persuasive.

The applicant has requested that the Examiner provide more detail as to the predetermined time "period" of Nakamura et al., and how it relates to the recited one on/off cycle of the present invention. The applicant argues that "the Nakamura et al "period" expresses an amount of time from a completion of a warm-up operation or a previous completion of a printing mode to the next printing mode. On the other hand, in the present invention, as recited in the claims, the period "expresses an amount of time required for one on/off cycle." The examiner responds by disagreeing with the applicant's assertion that the period shown in Nakamura et al is a duration of time from a completion of a warm-up operation or a previous completion of a printing mode to the next printing mode, rather than the period of on/off control as recited

in the claims of the present application. The examiner draws the applicant's attention to column 1, lines 31-56 where Nakamura et al discloses "The heating operation for the heater is controlled by a temperature control unit. Control temperatures corresponding to respective modes, i.e., a warm-up mode, a standby mode and a copying mode (or an image forming mode), are set in the temperature control unit...The temperature control unit performs **on-off control of current supply to the heater** so that the surface temperature of the fixing roller equals the control temperature while comparing the surface temperature of the fixing roller detected by a temperature-detector with the control temperature...Hence, when the accumulated standby time period is long, that is, when the frequency of image forming operations is small, electric power used for maintaining the surface temperature of the fixing roller at the standby temperature increases, causing an increase in economic burden on the user." When combined with the teaching that "The apparatus further includes an electric-power reduction unit for reducing or cutting electric power supplied to the heater when an image forming signal is not input for a predetermined time period...The electric power reduction unit sets the predetermined time period variably in accordance with frequency of image forming operations..." (abstract), it should be clear that on/off control of the heating unit, time period in accordance with frequency of image-forming operations, and different control modes are inexplicably linked. Thus is the basis for the examiner's previous statement of inherency. The examiner has already indicated allowable subject matter as a means of furthering prosecution of the case.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lsl LSL

LAMSON NGUYEN
PRIMARY EXAMINER
05/28/09